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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,046	06/04/2002	Cheng-Shing Lai	IACP0015USA	9778

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EXAMINER	
SHAPIRO, LEONID	

ART UNIT	PAPER NUMBER
2673	3

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/064,046	Applicant(s) LAI ET AL.	
	Examiner Leonid Shapiro	Art Unit 2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____. .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation of claim 1: "a flexible member connecting the magnetic field source and magnetic field sensor such that when a force is applied to the flexible member the relative position of the magnetic field sensor with respect to the magnetic field source is changed in a direction of the force by a distance proportional to the force" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: *The limitation of claim 1: "a flexible member connecting the magnetic field source and magnetic field sensor such that when a force is applied to the flexible member the relative position of the magnetic field sensor with respect to the magnetic field source is changed in a direction of the force by a distance proportional to the force" was not described in the specification.*

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 6, 8, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arita et al.(US Patent No. 5,432,5300 in view of Jackson (US Patent No. 6,611,139 B1).

As to claim 1, Arita et al. teaches a pointing device for a computer (See Figs. 12 A-B, item 31, Col. 9, Lines 25-38), comprising: a magnetic field source for generating a magnetic field (See Fig. 1, item 7, Col. 6, Lines 50-59) having a magnitude and direction proportional to a location relative to the magnetic field source that the magnetic field is measured (See Figs. 1, 3 A-B, items 7, 9, Col. 7, Lines 12-35 and Col. 3, Lines 45-60); a magnetic field sensor for measuring the magnitude and direction of the magnetic field generated by the magnetic source at a measurement location (See Figs. 1-2, item 9, Col. 7, Lines 12-35 and Col. 3, Lines 45-60), and outputting an electrical signal corresponding to the magnitude and direction of the magnetic field at the measurement location (See Figs. 3B, 37, items 9 a-b, Col. 14, Lines 41-53 and Col. 7, Lines 31-35);

Arita et al. does show a flexible member connecting the magnetic field source and magnetic field sensor such that when a force is applied to the flexible member position of the magnetic field sensor with respect to the magnetic field source is changed in a direction of the force by a distance proportional to the force; a processor for receiving the electrical signals output by the magnetic field sensor, and generating a

correspondent location signal of the pointing device; and a transmission system for conveying the location signal from the processor to the computer.

Jackson teaches a flexible member connecting the magnetic field source and magnetic field sensor such that when a force is applied to the flexible member position of the magnetic field sensor with respect to the magnetic field source is changed in a direction of the force by a distance proportional to the force (See Fig. 1, items 19-20, Col. 6, Lines 39-48 and Lines 59-67); a processor for receiving the electrical signals output by the magnetic field sensor, and generating a correspondent location signal of the pointing device (see Fig. 10, items 46, 51, Col. 9, Lines 46-62); and a transmission system for conveying the location signal from the processor to the computer (See Fig 11, items 56-57, 60, from Col. 9, Line 63 to Col. 10, Line 8).

It would have been obvious to one of ordinary skill in the art at the time of invention to implement a flexible member, a processor and a transmission system as shown by Jackson in Arita et al. apparatus in order to enable the movement of a cursor or object in the x-y and z directions as represented on a computer monitor (See Col. 1, Lines 9-11 in the Jackson reference).

As to claim 2, Jackson teaches the magnetic field source compises a permanent magnet (See Fig, 1, items 1-2, Col. 1, Lines 4-11).

As to claim 3, Jackson teaches the magnetic field sensor comprises at least two hall elements each having a measuring axis and each capable of measuring the magnitude of the magnetic field at the measurement location in direction of measuring

axis, the hall element arranged so that the measuring axes are not parallel (See fig. 1, items 14, 15, from Col. 5, Line 62 to Col. 6, Line3 and Col. 6).

As to claim 6, Jackson teaches the flexible member is dampened spring that can bend, compress, and extend (See Fig. 1, items 19-20, Col. 6, Lines 39-48 and Lines 59-67).

As to claim 8, Jackson teaches the pointing device comprising at least one button (See Fig. 7, items 64, 74).

As to claim 10, Jackson teaches the transmission system is a wireless transmission module (See Fig 11, items 56-57, 60, from Col. 9, Line 63 to Col. 10, Line 8).

4. Claims 4, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arita et al. and Jackson in view of Sava et al. (US Patent No. 4,459,578).

As to claim 4, Arita et al. and Jackson do not teach the magnetic field sensor comprising a single hall element having at least two mutually perpendicular measuring axes capable of measuring the magnitude of the magnetic field directions of each measuring axis at the measuring location.

Sava et al. teaches teach the magnetic field sensor comprising a single hall element (See Fig. 2, item 210), having at least two mutually perpendicular measuring axes capable of measuring the magnitude of the magnetic field directions of each measuring axis at the measuring location (replacing previous embodiment with two hall

sensors) (See Figs. 1-2, items 116, 118, 120, 122, 208, 210, from Col. 3, Line 56 to Col. 4, Line 11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the a single hall element as shown by Sava et al. in Arita et al. and Jackson apparatus in order to simplify mechanical construction.

As to claim 9, Jackson teaches z-direction sensing by hall sensor (See Fig. 7, item 81, from Col. 8, Line 60 to Col. 9, Line 8) and the pointing device comprising at least one button (See Fig. 7, items 64, 74).

Arita et al. and Jackson do not teach the button mechanically connected to the flexible member and is capable of changing the relative position of the magnetic field sensor with respect to the magnetic field source, and thus modifying the electrical signal output by the magnetic field sensor to comprise a button signal.

Sava et al. teaches as magnet position change the strength of the magnetic field surrounding hall element change (See Fig. 2, items 208, 210, from Col. 3, Line 56 to Col. 4, Line 11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to be capable of changing the relative position of the magnetic field sensor with respect to the magnetic field source, and thus modifying the electrical signal output by the magnetic field sensor as shown by Sava et al. in Arita et al. and Jackson apparatus to mechanically connect button to the flexible member and to comprise a button signal in order to simplify control of the mouse.

5. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arita et al. and Jackson in view of Clymer et al. (US Patent No. 5,525,901).

Arita et al. and Jackson do not show the magnetic sensor comprises at least two magnetoresistors each having a measuring axis and each capable of measuring magnitude of the magnetic field at the measuring location in a direction of the measuring axis, the magnetoresistors arranged so that the measuring axis are not parallel.

Clymer et al. teaches the magnetic sensor comprises at least two magnetoresistors each having a measuring axis and each capable of measuring magnitude of the magnetic field at the measuring location in a direction of the measuring axis, the magnetoresistors arranged so that the measuring axis are not parallel (See Figs. 1-2, items A, B, Col. 7, Lines 11-44).

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement two magnetoresistors each having a measuring axis and each capable of measuring magnitude of the magnetic field at the measuring location in a direction of the measuring axis, the magnetoresistors arranged so that the measuring axis are not parallel as shown by Clymer et al. in Arita et al. and Jackson apparatus in order to implement sensor system that is useful for determining angular position of an item to which it is attached (See Col. 2, lines 9-11 in the Clymer et al. reference).

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arita et al. and Jackson in view of Kruse et al. (US Patent No. 5, 259, 252).

Arita et al. and Jackson do not show the flexible member is a wire that can bend resiliently.

Kruse et al. teaches the flexible member is a wire that can bend resiliently (See Figs. 1, 4, items 41-42, 16', 26, Col. 4, Lines 18-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the flexible member as a wire as shown by Kruse et al. in Arita et al. and Jackson apparatus in order to provide an improved apparatus for detecting and measuring forces (See Col. 1, Line 53-54 in the Kruse et al. reference).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

The Mikan (US Patent No. 4,825,157) reference discloses hall-effect controller.

The Marshal et al. (US Patent No5,831,596) reference discloses joystick controller.

The Helmbrecht (US Patent No. 6,583,784 B1) reference discloses pointing device based on the hall effect and method operating the same.

The Endo et al. (US Patent No. 6,606,085 B1) reference discloses coordinate input device.

Telephone inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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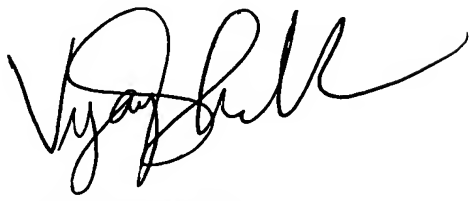

VIJAY SHANKAR
PRIMARY EXAMINER